DETAILED ACTION

1. This office action is responsive to communication filed on August 10, 2011.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Yelena Morozova (Reg. 65,499) on November 8, 2011.

3. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: Figures 7-10 should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

Allowable Subject Matter

4. Claims 1-5 and 11 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Consider claim 1, the prior art of record does not teach nor reasonably suggest, an image sensing apparatus comprising the combination of: an image sensing element includes a first light receiving area and a second light receiving area which are formed on an image pickup surface of a semiconductor substrate by a plurality of divisional joint

exposure operations, wherein the image pickup surface has on-chip color filter layer and on-chip micro lens layer on a semiconductor layer, wherein there is a shift between the on-chip color filter layer and the on-chip micro lens layer of the first receiving area and the on- chip color filter layer and the on-chip micro lens layer of the second light receiving area, and wherein pixel signals obtained by the first light receiving area and the second light receiving area are read out from the image sensing element via a same channel; a correction device which corrects difference between output levels of pixel signals output from the first light receiving area and the second light receiving area via the same channel, wherein the difference between levels of the signals is a level difference caused by the shift between the on-chip color filter layer and the on-chip micro lens layer of the first receiving area and the on-chip color filter layer and the on-chip micro lens layer of the second light receiving area; and a control device which controls to write a signal corrected by said correction device to a frame memory, as recited in claim 1.

Claims 2-5 and 11 are allowed as depending from an allowed claim 1.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Campbell et al. (US 2003/0006363) teaches shifting the micro lenses/color filters of a pixel array (See Abstract, figure 4, paragraphs 0023 and 0024).

9. Suzuki (US 2002/0025164) teaches an image sensor (figure 8) with shifted micro lenses (460, paragraphs 0090, 0093, 0094, 0097 and 0098).

10. Asai et al. (US 5,986,704) teaches an image sensor with purposefully displaced color filters (see Abstract).

11. Yamaguchi et al. (US 6,344,666) teaches an image sensor with purposefully displaced micro lenses (27, figure 2, see Abstract).

12. Miyano (US 5,610,390) teaches an image sensor with purposefully displaced micro lenses (20, figure 2, see Abstract).

13. Suzuki et al. (US 2001/0039061) teaches an image sensor with purposefully displaced micro lenses (See Abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALBERT CUTLER whose telephone number is (571)270-1460. The examiner can normally be reached on Mon-Thu (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Albert H Cutler/
Examiner, Art Unit 2622